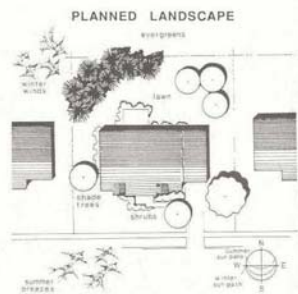


Appendix A

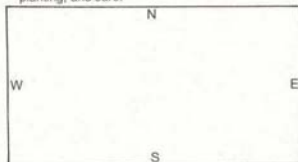
Example Educational Brochures and Handouts

The following example urban forestry educational material is provided to augment the City of Carlsbad's current educational program. The provided examples should be used as templates that can be customized to meet City standards. The International Society of Arboriculture (ISA) offers a plethora of informational and educational flyers, brochures, and other media. These public relations media can be viewed at WWW.isa-arbor.com/publications/publications.html.



PLANNING FOR YOUR HOME

- 1) To get started, sketch an outline of your house at the proper, north-south, orientation in the box below.
- 2) Locate existing trees and shrubs, and assess their usefulness in your plan. Determine available space for planting additional trees.
- 3) Identify your needs and apply the guidelines from this brochure.
- 4) Select trees that will satisfy conditions specific to your yard. Contact your local cooperative extension agent or favorite garden center for suggestions on the variety of tree to plant, planting, and care.



OTHER BENEFITS FROM PLANTING TREES

- ◆ **Less carbon dioxide and more oxygen.** Trees remove carbon dioxide and add oxygen to the air. (This will help decrease global carbon dioxide levels, and help reduce the "greenhouse effect".)
- ◆ **Clean air.** Trees remove dust and other pollutants from the air and make it healthier to breathe.
- ◆ **Clean water.** Trees and other plants reduce the amount of water flowing into the city's sewers, curbing the overflow at sewage treatment plants.
- ◆ **Property values.** Trees and other landscaping can increase property values 5 to 20%.
- ◆ **Privacy.** Trees screen unwanted views and noises.
- ◆ **Wildlife.** Trees provide food and shelter for birds and other animals.

For more information write:

Urban Forestry Information
USDA Forest Service
5 Radnor Corporate Ctr.
Suite 200
100 Mastsonford Road
Radnor, PA 19087

Recycled Paper

PLANT A TREE Where it counts!



USDA Forest Service
Northeastern Forest Experiment Station

Urban Forest Ecology
and Climatology Research
Syracuse, New York
University Park, Pennsylvania
Berkeley, California

"Caring for the land and serving people."

REDUCE ENERGY COSTS

The annual energy savings resulting from properly-placed plants around your home may be as high as 25%. Types of trees used and their locations in the yard depend on the area of the country you live in.

Plantings help cool your home in summer and may reduce heat loss in winter. In summer, trees and other plants absorb heat from the sun and cool residential areas by shading. During the winter, trees block cold winds. What follows are some guidelines for reducing energy costs while beautifying your home.

GENERAL CRITERIA FOR TREE SELECTION

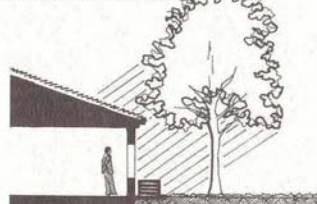
- 1) Identify the purpose of the tree.
- 2) Consider tree shape. How fast will it grow? How tall will it grow? How far will the branches spread?
- 3) Consider tree character. Does the tree have a dense canopy (more summer shade) or a sparse canopy (less summer shade). Do branches have an open pattern (less winter shade) or a dense pattern (more winter shade)?



- 4) Consider tree maintenance. Is it easy to care for? Does the tree produce messy fruits?

SUMMER COOLING

Shade trees save costs for air conditioning a home in summer. If you don't air condition your home, shading from trees can mean the difference between bearable and unbearable temperatures.



- ◆ Plant tall trees (40-50 feet at maturity) 15 to 25 feet from the east and west sides of the house to shade roof and walls. Remove lower branches to allow summer breezes and winter sunlight to pass through.
- ◆ Shade your air conditioner to reduce its operational costs.

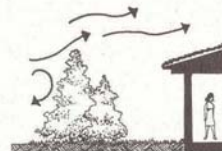


- ◆ Use ground covers and plantings for site cooling.
- ◆ Shade paved surfaces to reduce heat build-up. Compare the summer temperatures in the above diagram; temperatures are higher on sides without vegetation. In addition, more sunshine will be reflected into the house, making it warmer.

WINTER WARMING

Drafts from leaky windows and poorly insulated walls make a house feel colder. Trees help reduce drafts by blocking cold winds.

- ◆ Trees should be planted along the north and west side of the yard or in the direction of prevailing winter winds.
- ◆ A row of evergreens, 25 feet from the house, will channel the wind away from your home. The spacing of trees will depend on the variety used.



- ◆ With those homes needing a windbreak on the south side of the house, trees should be planted farther away to prevent winter shade.
- ◆ Single-row windbreaks are effective, but multiple rows (up to 5) are better.

Direct economic benefits are usually associated with energy costs. Air conditioning costs are lower in a tree-shaded home. Heating costs are reduced when a home has a windbreak. Trees increase in value from the time they are planted until they mature. Trees are a wise investment of funds since landscaped homes are more valuable than non-landscaped homes. The savings in energy costs and the increase in property value directly benefit each homeowner.

The indirect economic benefits of trees are even greater. These are available to the community or region. Lowered electricity bills are paid by customers when power companies are able to use less water in their cooling towers, build fewer new facilities to meet peak demands, use reduced amounts of fossil fuel in their furnaces and need fewer measures to control air pollution. Communities can also save if fewer facilities must be built to control storm water in the region. To the individual these savings are small, but to the community reductions in these expenses are often in the thousands of dollars.

Trees Require an Investment

Trees provide numerous aesthetic and economic benefits but also incur some costs. You need to be aware that an investment is required for your trees to provide the benefits that you desire. The biggest cost of trees and shrubs occurs when they are purchased and planted. Initial care almost always includes some watering. Leaf, branch and whole tree removal and disposal can be expensive.

To function well in the landscape, trees require maintenance. Much can be done by the informed homeowner. Corrective pruning and mulching will give trees a good start. Shade trees, however, quickly grow to a size that may require the services of a professional arborist. Arborists have the knowledge and equipment needed to prune, spray, fertilize and otherwise maintain a large tree. Your garden center owner, cooperative extension agent, community forester or consulting arborist can answer questions about tree maintenance, suggest treatments or recommend qualified arborists.

The PHC Alternative

Maintaining mature landscapes is a complicated undertaking. You may wish to consider a professional *Plant Health Care* (PHC) maintenance program which is now available from many landscape care companies. Their program is designed to

maintain plant vigor and should initially include inspections to detect and treat any existing problems which could be damaging or fatal. Thereafter, regular inspections and preventive maintenance will assure plant health and beauty. Refer to our "Plant Health Care" brochure for more information.

This brochure is one in a series published by the International Society of Arboriculture as part of its Consumer Information Program. You may have additional interest in the following titles currently in the series: • Insect and Disease Problems • Mature Tree Care • New Tree Planting • Trees and Turf • Benefits of Trees • Tree Selection • Plant Health Care • Avoiding Tree and Utility Conflicts • Recognizing Tree Hazards • Why Hire an Arborist • Buying High-Quality Trees • Tree Values.



Developed by the International Society of Arboriculture (ISA), a non-profit organization supporting tree care research around the world and dedicated to the care and preservation of shade and ornamental trees. For further information, contact ISA, P.O. Box 605, Norcross, IL 60457-0902, USA.



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Benefits of Trees



Most trees and shrubs in cities or communities are planted to provide beauty or shade. These are two excellent reasons for their use. Woody plants also serve many other purposes, and it often is helpful to consider these other functions when selecting a tree or shrub for the landscape. The benefits of trees can be grouped into social, community, environmental and economic categories.



Social Benefits

We like trees around us because they make life more pleasant. Most of us respond to the presence of trees beyond simply observing their beauty. We feel serene, peaceful, restful and tranquil in a grove of trees. We are "at home" there. Hospital patients have been shown to recover from surgery more quickly when their hospital room offered a view of trees. The strong ties of people and trees are most evident in the resistance of community

residents to removing trees to widen streets. Or we note the heroic efforts of individuals and organizations to save particularly large or historic trees in a community.

The stature, strength, and endurance of trees give them a cathedral-like quality. Because of the potential for long life, trees are frequently planted as living memorials. We often become personally attached to trees that we or those we love have planted.

Community Benefits

Even though trees may be private property, their size often makes them part of the community as well. Since trees occupy considerable space, planning is required if both you and your neighbors are to benefit. With proper selection and maintenance, trees can enhance and function on one property without infringing upon the rights and privileges of neighbors.

City trees often serve several architectural and engineering functions. They provide privacy, emphasize views or screen out objectionable views. They reduce glare and reflection. They direct pedestrian traffic. They provide backgrounds, or soften, complement or enhance architecture.

Trees bring natural elements and wildlife habitats into urban surroundings; all of which increase the quality of life for residents of the community.

Environmental Benefits

Trees alter the environment in which we live by moderating climate, improving air quality, conserving water and harboring wildlife. Climate control is obtained by moderating the effects of sun, wind, and rain. Radiant energy from the sun is absorbed or deflected by leaves on deciduous trees in the summer and is only filtered by branches of deciduous trees in winter. We are cooler when we stand in the shade of trees and are not exposed to direct sunlight. In winter, we value the sun's radiant energy; and because of this, we should plant only small or deciduous trees on the south side of homes. Wind speed and direction can be affected by trees. The more compact the foliage on the tree or group of trees, the greater the influence of the windbreak. The downward fall of rain, sleet and hail is initially absorbed or deflected by trees and this provides some protection for people,

pets and buildings. Trees intercept water, store some of it, reduce storm run-off and the possibility of flooding. Dew and frost are less common under trees because less radiant energy is released from the soil in those areas at night.

Temperature in the vicinity of trees is cooler than that away from trees. The larger the tree, the greater the cooling. By using trees in the cities, we are able to moderate the heat island effect caused by pavement and buildings in commercial areas.

Air quality can be improved through the use of trees, shrubs and turf. Leaves filter the air we breathe by removing dust and other particulates. Rain washes the pollutants to the ground. Leaves absorb carbon dioxide from the air to form carbohydrates that are used in the plant's structure and function. In this process, leaves also absorb other air pollutants such as ozone, carbon monoxide, and sulfur dioxide and give off oxygen.

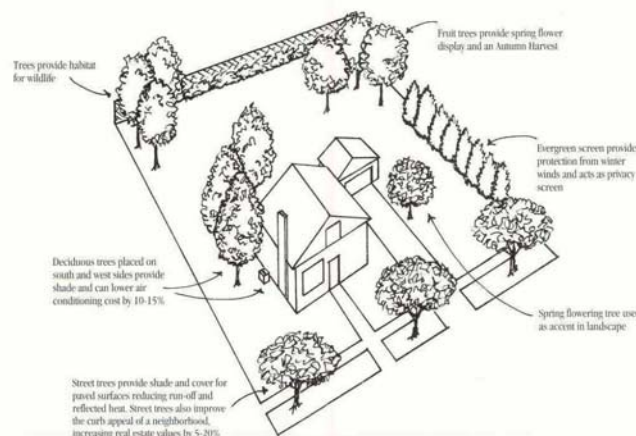
By planting trees and shrubs, we return to a more natural, and less artificial environment. Birds and other wildlife are

attracted to the area. The natural cycles of plant growth, reproduction and decomposition are again present, both above and below ground. Natural harmony is restored to the urban environment.

Economic Benefits

Property values of landscaped homes are 5-20% higher than those of non-landscaped homes.

Individual trees and shrubs have value, but the variability of species, size, condition and function makes determining their economic value quite difficult. The economic benefits of trees can be both direct and indirect.



A FINAL WORD ABOUT TREES AND THE CITY OF ANAHEIM

The City maintains a current inventory of 45,000 street trees, yet has a capacity for 55,000 trees. Of the 45,000 existing street trees, only a little more than half of them are mature specimens. Each year, the City plants an average of 1,000 trees, but some of these are replacements, not new plantings.

Concerned citizens can get involved in planting the "missing trees" in their neighborhoods by contacting "ReLeaf Anaheim" at 254-5129.

ReLeaf Anaheim is a community tree planting organization spearheading a program to plant, protect and educate others about trees. Comprised of volunteers, the group plants street trees in residential communities throughout the City. Their goal is to plant 20,000 trees for a "greener" Anaheim by the year 2000.

ReLeaf Anaheim is also sponsored by a State Urban Forestry Grant which receives funding through Proposition 70. The City of Anaheim provides planting materials such as root control barriers, arbor guards, and stakes. Funds for this publication are provided as part of this grant.

Anaheim is also proud to be a Tree City USA, joining a group of municipalities nationwide that believe the future of people and trees are inseparable.

Tree Operations
1626 East Vermont Avenue
Anaheim, California 92805
714 254-5129

Parks Superintendent
280 South Anaheim Boulevard
Anaheim, California 92805
714 254-5155



"A man has made at least a start on discovering the meaning of human life when he plants shade trees under which he knows full well he will never sit."
Elton Trueblood

Printed on recycled paper

CITY OF ANAHEIM

PARKS, RECREATION & COMMUNITY SERVICES

YOUR STREET TREE



WHY HAVE STREET TREES?

Trees represent a symbol of nature in the city. Trees protect the earth by making it safe, healthy and beautiful. They are a natural resource and play an important role in meeting regional challenges and addressing global concerns from water shortages and smog to flash flooding and soil erosion.

Trees offer functional benefits as well. Below are listed just a few...

- ✿ Beautify the neighborhood (highlight homes with style and distinction).
- ✿ Help reduce energy demands (which reduces cost of energy and power generation).
- ✿ Increase property values (tree lined streets add character to the community).
- ✿ Improve air quality (by absorbing greenhouse gasses and trapping dust on leaf surfaces).
- ✿ Produce oxygen (trees are nature's oxygen factories).
- ✿ Cool surroundings and extend outdoor use (by filtering sunlight and releasing water vapor into the air from leaves).
- ✿ Provide noise abatement, windbreak and privacy (create natural sound barriers).
- ✿ Create an urban wildlife habitat (birds feed on fruits and cones).

HOW TO GET A STREET TREE PLANTED

Tree planting requires careful planning. The wrong tree in the wrong place will do more harm than good. A tree that has been properly selected, planted and maintained will require little care once it reaches maturity and yet will provide many benefits.

If residents would like the City to consider planting a street tree in the parkway adjacent to their property, call Tree Operations to place the request. The office staff will take the necessary information.

The Tree Coordinator will inspect the site to determine the type of tree and planting location. In choosing a location, the Coordinator considers both the underground and overhead space the mature tree will occupy to ensure adequate canopy and rooting space. The Coordinator will examine a number of factors including parkway width, species already present in the neighborhood, utility line clearance, and location of water meters, telephone poles, fire hydrants and driveways.

If the parkway site qualifies for a tree, the Coordinator will mark the curb, advise the resident of the species to be planted and provide an approximate timeframe. Planting requests are typically processed within 45-60 days.

Species selected are expected to perform well under urban conditions without excessive care. The street tree will be planted with a root control barrier to promote deep rooting and to decrease the incidence of hardscape and rodent damage. An arbor guard will protect the young tree trunk from injury due to lawn equipment.

Residents can also plant a tree in the parkway at their expense but must request a permit to plant the tree by calling Tree Operations. The Tree Coordinator will need to approve both the species desired and the location of the tree.

MAINTENANCE

The Tree Operations Section of the Parks Division is responsible for maintaining the City's public tree population.

Maintenance includes but is not limited to inspection, planting, removing, pruning, and stump grinding.

When a resident has a concern about a street tree, or wishes to report a condition hazardous to public safety, such as branches in the power lines or reduced visibility, the resident should call Tree Operations. Most questions can be answered over the phone. However, if necessary, the Tree Coordinator will inspect the tree, notify the resident what service will be done, and when it will be done.

The Anaheim Public Utilities Department contracts with Tree Operations to maintain power line clearance. This service extends to clearing trees planted on private property, when branches cause a power line hazard.

Trees require very little water in comparison to the shading, cooling and air cleaning benefits they provide. But insufficient amounts of water can stress a tree making it susceptible to pests and disease.

A young tree requires only 5-10 gallons of water per week. This amount of water equals only 1-2 toilet flushes. You can water your tree without ever turning on the hose. Water collected in a pail from the shower while waiting for the water to warm up can be used to water your street tree.

Residents are requested to provide sufficient water and to fertilize the tree in the Spring and Fall. This practice will allow the tree to grow and sustain its long-term health.

REMOVAL

It is not the City's policy to remove street trees because they are messy, have minor root problems, or because there is minor damage to the curb, gutter, street or sidewalk.

It's important to maintain a balance of mature trees in the urban landscape. The longer-lived a tree is, the greater its benefits. A mature tree affords a large canopy of shade, is able to produce additional life-giving oxygen, and stores increasing amounts of carbon in wood growth each year.

However, decline and death through natural attrition are part of a tree's life cycle. A component of active urban forest management is the removal of dead or hazardous trees.

In order for a resident to have a street tree removed privately, a permit needs to be obtained from Tree Operations. Requests for tree removals are reviewed by the Tree Coordinator on an individual basis, as circumstances differ.

Some of the conditions under which the City allows the removal of a street tree are:

- ✿ If the roots have invaded the sewer line.
- ✿ Repeated curb, gutter, street and sidewalk damage.
- ✿ If root pruning would be hazardous to the stability of the tree.
- ✿ If the property owner has a severe allergic condition to the pollen of the species. (Species vary in their pollen production).
- ✿ If tree debris presents a hazard for a handicapped or disabled property owner.
- ✿ If power line clearance is a continual hazard.

It is the City's policy to replace any street tree that is removed, with few exceptions.

ANAHEIM'S TREE OPERATIONS

The Tree Operations Manager is responsible for developing an annual work plan to care for the City's street trees, administering an operations budget, and overseeing the office and field operation.

The office staff responds to customer service requests and updates the tree inventory maintenance system, called T.R.I.M.S. The office staff is available from 7:00 a.m. to 3:30 p.m. Monday-Friday to answer any questions or concerns you may have.

The Tree Coordinator, a certified arborist, conducts inspections, administers tree trimming contracts, prepares the crew schedule, and follows up on service requests.

Field personnel consist of seven crews of three workers each. A lead tree trimmer, tree trimmer and a laborer make up each team. A two worker standby team is assigned at all times for emergency purposes during non-work hours.

The normal trim cycle is once every 3 years, depending on the tree species. Some faster growing trees are trimmed on an 18 month cycle. Palms are trimmed yearly due to fruit drop.

If a resident would like to know the trim cycle scheduled for their street tree, the Tree Operations staff can provide this information.



HOW YOU CAN HELP

While planting trees is a positive step to help our ailing environment, the commitment doesn't end there. Ongoing stewardship is vital to maintaining the health of street trees and assuring their survival in the urban landscape. Every resident can be part of the solution to the environment's problems by caring for street trees.

If the street tree requires maintenance, such as a new stake or tie, or if the tree has been injured by a car or vandals, please inform Tree Operations as soon as possible.

If there is an emergency situation, such as a tree limb down, or if a hazardous condition exists, such as a tree blocking visibility, or branches have grown into the power lines, then notify Tree Operations immediately. Emergencies before 7:00 a.m. and after 3:30 p.m. and on weekends, should be reported to Lewis substation at 655-9051.

These are steps the resident can take to help their street tree withstand the rigors of urban life and ensure healthy, more beautiful street trees:

- ✿ Deep water young trees, 5-10 gallons once a week without fail.
- ✿ Don't trim, plant or remove a street tree without a permit to do so.
- ✿ Mulch around the tree to slow water evaporation; avoid contact with the tree trunk.
- ✿ Fertilize twice a year with a good balanced fertilizer (always follow directions on the fertilizer container). It is best to fertilize in the Spring and again in the Fall.
- ✿ Keep weeds, turf, flowers, etc. away from the base of the tree so roots can breathe easily.
- ✿ Avoid damaging the tree trunk by contacting it with lawn cutting equipment.

TREE-MEMBRANCE

TREES...

Trees offer a unique way to honor or remember someone you love and respect. They stand as a *living* tribute to those they honor. Planted now, a tree can live for hundreds of years from today, making your memorial a lasting one for future generations.

TREE-MEMBRANCE

The Tree-membrance Program is a wonderful way to honor a loved one and provide for the whole St. Louis community. Trees in parks benefit everyone. They beautify, shade, and provide comfort. By purchasing and dedicating your tree(s) in a public park, we all can pay tribute to those honored as well as enjoy the comforts of a living and giving tree.

THE TREE YOU DEDICATE

In dedicating a tree-membrance tree, you have a choice of a shade, flowering, or an evergreen tree. Three parks have been set aside for the trees from which you may choose: Forest Park, O'Fallon Park, and Willmore Park. Each park has an overall landscape design, to which we will adhere in locating your tree.

HOW TO DEDICATE YOUR TREE

To obtain your tree-membrance trees, please fill out the attached application and return it to the forestry division. We will review it, making sure that your requests can be met, and place the tree

order with our contracted nursery. The nursery will bill you **directly** and upon receipt of your payment will notify the forestry division. We will then schedule your tree for the next planting season. To identify your trees upon planting, they will be tagged with a yellow ribbon and an I.D. band. These bands are temporary however, as permanent tags would hinder the growth of the tree.

COST

Costs for trees will vary slightly, depending on the species of tree. Estimated costs are as follows:

Shade Tree, 1"-2" diameter \$50.00
Flowering Tree, 1"-2" diameter.. \$50.00
Evergreen Tree, 4'-6' height \$50.00

A CELEBRATION

Every Arbor Day we will celebrate Tree-membrance and recognize those who have participated with an Arbor Day ceremony. Framed certificates, honoring the memorialized person(s) will be presented to the tree-membrance donors. Join us in celebrating tree-membrance!

For more information please call the forestry division at 535- 0075

APPLICATION

MEMORIAL TREE:____ HONORARY TREE:____

DATE:_____

NAME:_____

ADDRESS:_____

CITY:_____

STATE:_____ ZIP:_____

PHONE:_____

TREE TO BE DEDICATED TO:_____

NUMBER OF TREE(S):_____

SHADE:_____

FLOWERING:_____

EVERGREEN:_____

PARK LOCATION:_____

FOREST PARK:_____

O'FALLON PARK:_____

WILLMORE PARK:_____

CERTIFICATE TO BE:_____

MAILED AFTER PLANTING:_____

PRESENTED AT CEREMONY:_____

PLEASE DETATCH AND SEND TO:

CITY OF ST. LOUIS FORESTRY DIVISION
5600 CLAYTON RD.
ST. LOUIS, MO 63110